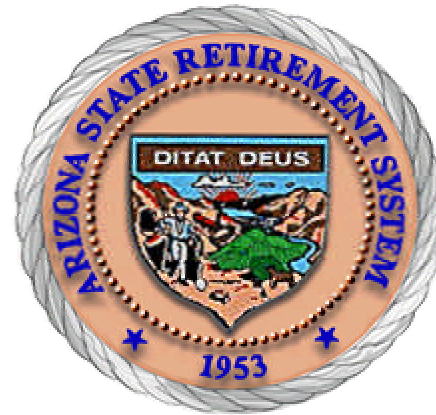# Arizona State Retirement System

Asset Allocation Study

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Importance of Asset Allocation

- Determining the Arizona State Retirement System Asset Allocation Policy is the most important decision that will be made in managing the investment portfolio.

- Why?
  - Asset Allocation is responsible for 80-90% of total portfolio return.
  - Manager selection and the manager's security selection and market timing decisions account for the balance of return.

Mercer Consulting
Capital Markets Assumptions

Assumptions*

Asset Class	Expected Return	Standard Deviation
	----------Annualized----------	
U.S. Equity	8.5%	18.6%
International Equity	8.5%	21.9%
U.S. Fixed Income	4.5%	6.3%
Real Estate	7.7%	13.5%
Total Portfolio	7.41%	13.35%

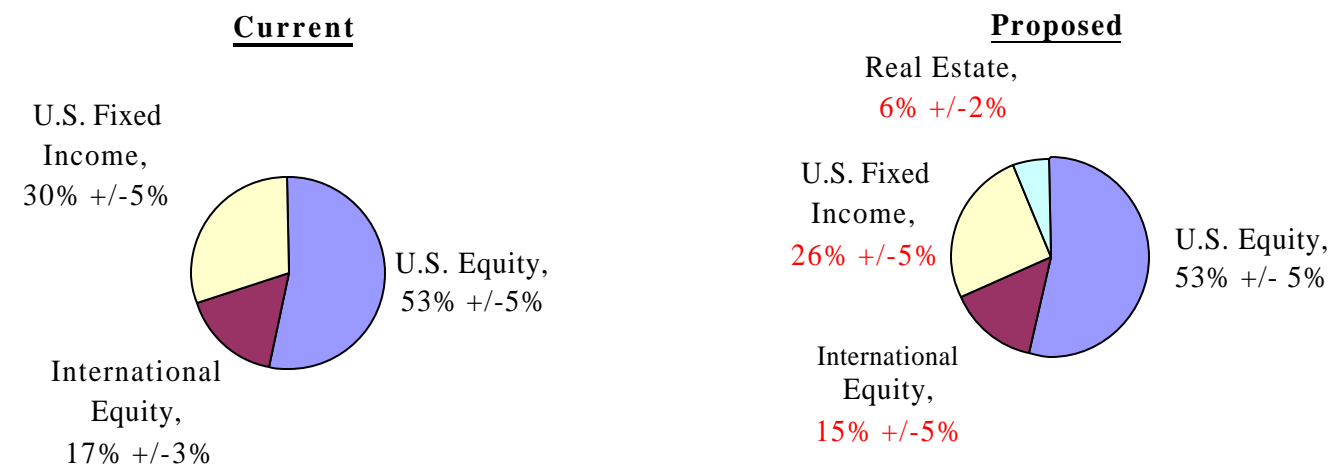* As of March 2003 for the following 10-year time frame.

Actual Returns**

YTD June 2003	2002	2001
	----------Annualized----------	
11.8%	-22.1%	-11.9%
9.9%	-15.7%	-21.2
3.9%	10.3%	8.4%
4.0%	6.8%	7.3%

** Actual Returns are for the following indexes:
   U.S. Equity– S&P 500
   International Equity– MSCI EAFE
   U.S. Fixed Income– Lehman Brothers Aggregate
   Real Estate– NCREIF Property Index

Broad Asset Allocation

- Objective: To determine the appropriate mix of investment vehicles given Mercer's capital markets assumptions regarding expected asset class returns and standard deviation.

Current

U.S. Fixed Income, 30% +/-5%

U.S. Equity, 53% +/-5%

International Equity, 17% +/-3%

Proposed

Real Estate, 6% +/-2%

U.S. Fixed Income, 26% +/-5%

U.S. Equity, 53% +/- 5%

International Equity, 15% +/-5%

- Rationale: A reduction in international equity and U.S. fixed income and the inclusion of real estate is anticipated to increase ASRS's total expected return with only a negligible change to the risk profile of the total fund.

Sub-Asset Class Allocation: U.S. Equity

- Objective: To determine the appropriate allocation of U.S. Equity portfolios among large-, mid-, and small-cap sub-asset classes.

	Current	Proposed
U.S. Large-Cap Equity	45% ±5.0%	43% ±5.0%
U.S. Mid-Cap Equity	4% ±1.5%	5% ±1.5%
U.S. Small-Cap Equity	4% ±1.5%	5% ±1.5%

- Rationale: consistent with 1) Mercer and ASRS risk/return assumptions which expects out-performance of mid- and small-cap relative to large-cap and 2) the sub-asset class weightings in the broad U.S. equity market.

Asset Class Benchmarks

- Objective: To determine the appropriate asset class benchmarks to be used to assess performance.

Asset Class	Benchmark
U.S. Large-Cap Equity	S&P 500
U.S. Mid-Cap Equity	S&P 400
U.S. Small-Cap Equity	Russell 2000
International Equity	MSCI EAFE
U.S. Fixed Income	Lehman Brothers Aggregate

Note: Real Estate benchmark(s) to be determined during real estate
implementation process with assistance from a real estate consultant

Passive/Active Targets

- Objective: To determine the appropriate mix between passive/enhanced-passive and active portfolios.

Asset Class	Targets with Ranges	
	Current	Proposed
U.S. Equity Large-Cap	75% ±10%	75% ±10%
U.S. Equity Mid-Cap	37.5% ±20%	45% ±20%
U.S. Equity Small-Cap	30% ±20%	30% ±20%
U.S. Fixed Income	80% ±10%	80% ±10%
International Equity	30% ±20%	30% ±20%

- Rationale: 1) consistent with Mercer and ASRS analysis relative to fee-adjusted performance universe data and 2) ASRS's historical performance experience with mid-cap managers.

Implementation

- The new asset allocation policy will be implemented effective October 1, 2003.

- Funding of real estate will occur as market conditions allow.

- Rebalancing Process:
  - If any asset class is more than ±5% from its target (equity and fixed income), the asset class will be rebalanced to its target regardless of transaction costs.
  - If any asset class is at or within ±5% of its target (equity and fixed income), the asset class will be rebalanced toward its target if a 90% reduction in transaction costs can be effectuated.
  - Sub-asset class targets will not be rebalanced using this methodology. Instead, the ASRS asset class/investment manager search process will be utilized to rebalance at the sub-asset class level.
  - For rebalancing purposes, the real estate benchmark target allocation will initially be prorated between equities and fixed income during the real estate funding period.